AMENDMENTS TO THE CLAIMS

The claims below replace all prior versions, and listings, of claims in this application.

1. (Currently Amended) A frequency hopping communications device for transmitting signals on a plurality of M subcarrier signals in parallel, each of said M subcarrier signals corresponding to a different one of M subcarrier signal frequencies, said M subcarrier signal frequencies being a subset of N subcarrier frequencies on which said communications device may transmit signals over time, where M and N are positive integers and where M<N, said frequency hopping communications device including:

a frequency control circuit for controlling which of the N subcarrier frequencies are generated and used by said device for the transmission of signals;

a plurality of M separate subcarrier signals paths operating in parallel, each of the M subcarrier signal paths including a programmable signal generator coupled to said frequency control circuit, a power amplification circuit and a filter circuit, said programmable signal generator for generating a subcarrier signal determined by said frequency control circuit and having a subcarrier frequency corresponding to said subcarrier signal path to which said signal generator corresponds, wherein each of the M signal filter circuits, that each correspond to a different one of said M separate subcarrier signal paths, is a fixed filter, at least one of the M fixed filters having a passband bandwidth at least equal to Y times the average frequency spacing between the N frequencies that said device can use as the N subcarrier frequencies, where Y is a positive number greater than 1; and

a combining circuit for combining analog subcarrier signals corresponding to different subcarrier signal paths prior to transmission.

2. (Cancelled).

3. (Currently Amended) The device of claim [[2]]1, wherein Y > N divided by M.

4. (Currently Amended) The device of claim [[2]]1, wherein Y is at least as large as N.

5. (Currently Amended) The device of claim [[2]]1, wherein each of said M signal filter circuits are identical fixed filters each having a passband bandwidth covering the full set of N subcarrier signal frequencies which may be used by said device.

6. (Previously Presented) The device of claim 5, wherein the M subcarrier signals are OFDM subcarrier signals and where the N subcarrier frequencies are evenly spaced frequencies.

7. (Currently Amended) The device of claim [[2]]1, wherein the fixed filter included on each of said M separate subcarrier signal paths is positioned in series with said corresponding power amplification circuit either before or after the corresponding power amplification circuit.

8. (Previously Presented) The device of claim 7,

wherein the programmable signal generator included in each subcarrier signal path generates an analog subcarrier signal; and

wherein said power amplification circuit and said filter circuit included in each subcarrier signal path are analog circuits.

9. (Previously Presented) The device of claim 1, wherein each of the M signal filter circuits, that each correspond to a different one of said M separate subcarrier signal paths, is a programmable filter.

10. (Previously Presented) The device of claim 9, wherein each of the M programmable filters has a passband corresponding to the subcarrier signal frequency of the subcarrier signal generated by the programmable signal generator circuit included on the same subcarrier signal path as the programmable filter.

11. (Previously Presented) The device of claim 10, wherein the programmable filters have a passband which has a bandwidth sufficient to pass said subcarrier signal but reject the nearest neighboring one, in frequency, of said N subcarrier signals.

12. (Previously Presented) The device of claim 9, wherein said device further transmits information using at least one additional preselected subcarrier frequency, the device further comprising:

an additional subcarrier signal path including an amplifier and fixed filter for amplifying and filtering a subcarrier signal corresponding to said additional preselected subcarrier frequency.

13. (Previously Presented) The device of claim 12, where said additional subcarrier frequency corresponds to a control channel used to transmit control information.

14. (Currently Amended) A frequency hopping communication method for use in a communications system wherein a device can transmit information using M subcarrier signals at a time, each of the M subcarrier signals corresponding to a different subcarrier frequency, where M and N are positive integers and where M is less than N and where N is the total number of different subcarrier frequencies said device can use over time, the method comprising:

i) operating M programmable signal generators to generate said M subcarrier signals;

ii) separately processing each of the M subcarrier signals to produce M processed subcarrier signals, the processing of each of said M subcarrier signals including an amplification operation and a filtering operation, said separate processing thus including M separate filtering operations, said M separate filtering operations are performed using M separate fixed filters, at least one of the M fixed filters having a bandwidth at least equal to Y times the average frequency spacing between the N frequencies that said device can use as the N subcarrier frequencies, where Y is a positive number greater than 1;

iii) combining the M processed subcarrier signals to generate a frequency division multiplexed transmission signal;

iv) controlling at least one of said M programmable signal generators to change the frequency of the subcarrier signal generated by said at least one programmable signal generator; and

v) repeating steps (i), (ii), and (iii).

15. (Previously Presented) The method of claim 14, wherein said M subcarrier signals are analog signals and wherein said filtering operation is an analog filtering operation.

16. (Cancelled).

17. (Currently Amended) The method of claim [[16]]14, wherein Y > N divided by M.

18. (Currently Amended) The method of claim [[16]]14, wherein Y is equal to or greater than N.

19. (Previously Presented) The method of claim 15, wherein said M separate filtering operations are performed using identical fixed filters each having a bandwidth covering the full set of N subcarrier signal frequencies which may be used by said device.

20. (Previously Presented) The method of claim 19, wherein the N subcarrier signals are OFDM subcarrier signals.

21. (Previously Presented) The method of claim 14, wherein said M separate filtering operations are performed using M separate programmable filters, the frequency of each of each of the M programmable filters corresponding to the frequency of the subcarrier signal being filtered.

22. (Previously Presented) The method of claim 14, further comprising:

changing the amount of power amplification performed on one of the M subcarrier signals when the frequency of said subcarrier signal is changed.

23. (Currently Amended) The method of claim [[16]]14, wherein controlling at least one of said M programmable signal generators to change the frequency of the subcarrier signal includes:

operating said M programmable generators to switch from generating a first set of M subcarrier signals corresponding to a first set of M uniformly spaced subcarrier frequencies to

generating a second set of M subcarrier signals corresponding to a second set of M uniformly spaced subcarrier frequencies, a first subcarrier frequency in said first set of M subcarrier frequencies being separated from a first subcarrier frequency in said second set of M subcarrier frequencies by a frequency spacing that is less than Y times the frequency spacing between subcarrier signals in said first and second sets of M subcarrier signals.

24. (Currently Amended) A frequency hopping communications device for transmitting signals on a plurality of M subcarrier signals in parallel, each of said M subcarrier signals corresponding to a different one of M subcarrier signal frequencies, said M subcarrier signal frequencies being a subset of N subcarrier frequencies on which said communications device may transmit signals over time, where M and N are integers and where M<N, said frequency hopping communications device including:

frequency control means for controlling which of the N subcarrier frequencies are generated and used by said device for the transmission of signals;

a plurality of M separate subcarrier signals paths operating in parallel, each of the M subcarrier signal paths including a programmable signal generator means for generating a corresponding one of the M subcarrier signals, power amplification means for amplifying the corresponding one of the M subcarrier signals and filter means for filtering the corresponding one of the M subcarrier signals, said programmable signal generator means generating a subcarrier signal determined by said frequency control means and having a subcarrier frequency corresponding to said subcarrier signal path to which said signal generator corresponds, wherein each of the M signal filter means is a fixed filter, at least one of the M fixed filters having a passband bandwidth at least equal to Y times the average frequency spacing between the N frequencies that said device can use as the N subcarrier frequencies, where Y is a positive number greater than 1; and

combining means for combining analog subcarrier signals corresponding to different subcarrier signal paths prior to transmission.

25. (Cancelled).

26. (Currently Amended) The device of claim [[25]]24, wherein Y > N divided by M.

27. (Currently Amended) The device of claim [[25]]24, wherein Y is at least as large as N.

28. (Currently Amended) The device of claim [[25]]24, wherein each of said M signal filter means are identical fixed filters each having a passband bandwidth covering the full set of N subcarrier signal frequencies which may be used by said device.

29. (Currently Amended) A computer readable medium embodying machine executable instructions for controlling a communications device to implement the steps of a frequency hopping communication method, the method being for use in a communications system wherein a device can transmit information using M subcarrier signals at a time, each of the M subcarrier signals corresponding to a different subcarrier frequency, wherein M and N are integers and where M is less than N and where N is the total number of different subcarrier frequencies said device can use over time, the method comprising the steps of:

i) operating M programmable signal generators to generate said M subcarrier signals;

ii) separately processing each of the M subcarrier signals to produce M processed subcarrier signals, the processing of each of said M subcarrier signals including an amplification operation and a filtering operation, said separate processing thus including M separate filtering operations, said M separate filtering operations are performed using M separate fixed filters, at least one of the M fixed filters having a bandwidth at least equal to Y times the average frequency spacing between the N frequencies that said device can use as the N subcarrier frequencies, where Y is a positive number greater than 1; ~~and~~

iii) combining the M processed subcarrier signals to generate a frequency division multiplexed transmission signal;

iv) controlling at least one of said M programmable signal generators to change the frequency of the subcarrier signal generated by said at least one programmable signal generator; and

v) repeating steps (i), (ii), and (iii).